The Watermelon Wilt.

Editor of The Progressive Farmer:

The watermelon wilt is causing great damage to the watermelon industry in North Carolina this year, cutting down seriously the amount of fruit raised, and in many cases reducing the crop to absolutely nothing. Whole fields present but a mass of dead vines. The present year shows the disease in a much more destructive form than this State has known it before, although the story is old in many of our sister Southern States, where the raising of melons has to be largely abandoned.

The disease cannot be cured, nor can it be wholly prevented, yet with proper precaution its spread into fields not now infected can be retarded or entirely avoided.

The wilt is readily recognized from the fact that the leaves first droop, as though they were suffering from want of moisture, rapidly wilt and soon die, the runner dying with the leaves. Soon the whole plant is dead. Upon cutting the main tap root across near the surface of the ground such plants are found to present a yellow color, making a distinct contrast with the white color of the healthy plants. This one character taken together with the wilted appearance of the vine, will enable any one to recognize the true watermelon wilt.

WHAT THE DISEASE IS

This disase is caused not by insects, but by a very small microscopic germ, a fungus, which lives in the soil. It is so small that millions may exist in one teaspoonful of soil. This germ is able to live in the soil for some considerable length of time. Therefore if your field suffers from the wilt this year, it would be folly to plant that field to melons again next year or year after. It must be abandoned for the culture of melons until the germ in the soil dies. How long that will take is not yet certain. The germ has been known to live in the soil for four years after watermelons had ceased to be raised there. It will be seen from this that there is very little hope of ever getting rid of this disease when it is once in a field. It therefore behooves us to give especial care to prevent the disease from spreading into fields which are not yet diseased.

The spread of the disease may occur in the following ways:

(1) Soil which is removed from a diseased field into another field, for example by washing, or by tools, may carry these germs with it. This would indicate that tools should be thoroughly cleaned before being carried from the infected field to the healthy fields.

(2) Diseased plants carried in any way or blown from the diseased field to the healthy field carry the contagion. One common way in which these vines are carried is by cattle. The cattle spread the disease by carrying it into healthy fields and leaving it, in the manure, the germ uninjured.

With these points in mind a few suggestions can be made as to the restriction of the disease to its present confines.

REMEDIES

First. Rotate your crops. You may grow anything else that you wish on this land, but do not replant it to watermelons until you are sure that the watermelon wilt germ in the soil is dead. This will probably take more than four years, and even at the end of that time you had best try it with a few hills before planting the whole field to melons.

Second. Remove and burn all diseased plants. This will prevent the formation of a very great number of spores, and thus diminish the contagion. Go into your diseased field and pull and burn all diseased plants as soon as you see them. If your whole field is diseased, pull and burn all melon plants in order to prevent their spread by the wind, and to prevent them from passing into the hay crop, and thus infecting your manure for next year.

Third. Do not allow cattle to pasture on diseased vines and thus spread it through the manure.

Fourth. Clean your tools so as not to carry the germs from infected fields to uninfected fields. Remove the dirts from all the tools. A teaspoonful of dirt may contain thousands of germs.

Fifth. Do not use any manure which by any possible means may have been contaminated with the watermelon wilt. The manure may be contaminated in two ways: first, by trash from the field being thrown on the compost heap. Second, by feeding to the stock cow pea hay in which there may be traces of diseased watermelon, leaves, stalks, roots, fruit, etc., the germs passing through the cow into the manure uninjured.

OTHER SUGGESTIONS

The practice of raising watermelons before cow peas leads to the presence of some watermelon vines in the cow pea hay, and this likewise leads to the presence of germs in the compost heap. Such manure should never be placed on land which is still free from the germ, or which is to be used to raise watermelons on, as this is an almost sure way of spreading the wilt.

There is no objection to the use of stable manure which does not contain the fungus, but experience has shown that when the wilt once gains entrance to the compost heap or barn yard, that it remains there for years, and all of the manure taken out of such a yard will be likely to spread the disease. Hence it is exceedingly dangerous in regions where there is any possibility of the wilt, to use any stable manure on the field where you intend to plant melons.

The outlook for the melon industry is not encouraging, and the treatment that can be recommended for this disease is not very promising, but for this very reason it is all the more evident that any person who still possesses an uninfected field, should exercise the greatest care with his tools, cattle, manure, and take every precaution possible to preserve that field in its present uninfected condition. With the present scarcity of watermelons, and the promise of a still greater scarcity in the future, the value of uninfected fields rises rapidly.

IMPORTANT NOTICE

It is the desire of the Station to do everything possible to assist the watermelon growers in combatting this disease. To this end we desire to know where, and how abundant, this disease is at present, and ask that every grower who is affected with the wilt, write to the Station, stating the amount of damage, and what he knows of the history of the disease in his region. Pull up a diseased plant and cut off the runners about three inches from the root and send with your letter this root with the stubs of the runners on it.

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Fodder Pulling.

In the slavery days when labor was cheap, and methods of utilizing waste products was unknown, there was a reason in pulling fodder. Now there is absolutely none. The only thing to be said in its favor is the excellence of well-cured fodder as a stock food. Fodder pulling is hard work and hot work. It must be crowded into a short period of time, for fodder deteriorates every day after reaching its maturity. It must be taken up promptly, for even a heavy dew on wilted fodder will injure it, and the whole labor expended will be lost if a shower wets it. It is thenceforth ruined and worthless. Pulling fodder especially cuts off the yield of corn in weight. It checks the growth of the plant by removing its lungs and exposing the stalk before the ear has ripened. Who would think of pulling the leaves off his strawberries when the fruit is just turning? The same farmer who pulls his fodder complains bitterly when the caterpillar eats the leaves of his cotton. But the caterpillar is doing for his cotton just what he has done for his corn.

What then, shall the farmer lose his fodder? By no means. The shredder has solved that problem for the Southern farmer.

At the North where corn is planted closely and the stalks are small, they cut stalk and all and shock it in the field, to be hauled in later in the season. After the ears are removed the remainder, called stover, maks an excellent food for cattle.

Southern corn grows too large for that, but the shredder tears it to pieces so that stalk, fodder and shucks are turned out ready for the stock to begin chewing on it at once.

Every farmer who plants 50 acres in corn will find it economy to have a shredder.

Small farmers can either combine to own one or hire their shredding done. It will cost less than to pull the fodder and lose the stalks.—Southern Farmer.

EASY SCIENCE STUDIES FOR FARMERS.

XXI.—Phosphoric Acid.

Of course you knew phosphoric acid would come next. The average Western farmer has less interest in phosphoric acid than the Eastern farmer and the farmer who buys commercial fertilizer. The New Englander depends largely upon "phosphates," his soil being poor in this respect, while, generally speaking, Western soil still has a fair supply of phosphoric acid.

Confining this talk to a brief outline of what phosphoric acid is and does, we leave the moral to the reader.

The element of all the "phos-es" is phosphorus. The ancients called the morning star "Phosphor," and the name was then applied to the substance which glowed in the dark, familiar examples of which we see in the glow wrom, the fire-fly, matches and the beautiful phosphorescent light in tropic seas. Phosphoric acid is the plant food form of this element and it is found naturally in the soil, about 4,500 pounds to the acre in the top nine inches of good arable land. Much of this is not soluble nor available for plants, and often a dressing of but fifty pounds to the acre of superphosphates increases productiveness.

One-half pound of this important constituent of plants is found in every bushel of wheat, one-third in every bushel of corn, and two-thirds of a pound in every bushel of corn and the stalks and leaves. It makes grain where nitrogen makes rank growth of foliage. For every five pounds of phosphoric acid in cow's milk, there will be sixteen pounds in the manure.

The general term "phosphates" is given to the commercial forms. A phosphate is a combination of phosphoric acid with some other substance ,usually lime. In nature it is found in bones, bone deposits or rocks. The supply in this country comes largely from phosphate deposits near Charleston, S. C., in Florida, Georgia and Tennessee. Most of it is insoluble and is in this state even when washed, dried and ground, available for plant support only as it decays. As it decays slowly, planters usually get quick returns by using superphosphates. This product is made by mixing sulphuric acid with pulverized phosphate. This liberates the phosphoric acid and renders it immediately available.

Phosphates are needed in making brain and nerve tissues and a sufficient quantity of this element should be eaten by man as well as fed to stock.—Colman's Rural World.

German papers say the mule will probably be replaced in the twentieth century by a more efficient animal, as it has been demonstrated that the mule, the cross between horse and donkey, is inferior to the cross between horse and zebra. Formerly the opinion prevailed that the zebra was almost extinct. The opening up of Africa, particularly the eastern part, reveals these fine animals in large numbers.